BE IT KNOWN that I, ***Gunter LEOPOLD and Klaus KAUPP***,

have invented certain new and useful improvements in

HOLDER FOR A BEVERAGE CONTAINER

of which the following is a complete specification:

BACKGROUND OF THE INVENTION

The present invention relates to a holder for beverage containers.

Holders having a cup-shaped container receptacle for cups, beakers, beverage cans, bottles or the like are known from the prior art. The known holders have at least one or several holding jaws or the like arranged distributed in part around the circumference. These project into the interior of the cup-shaped container receptacle and having sloping and/or rounded sliding contact surfaces. Owing to a bearing system and spring system, the holding jaws can be pressed away radially by the circumferential surface of a drinks container and provide support for the drinks container by gripping. Such a holder is described, for example, in DE 296 06 583.8.

The corresponding gripping device has holding jaws, each of which individually execute their adjusting movement via pivoting bearings. As the spring element, a resilient circular ring or a band is proposed, which engages around the container receptacle. Such a gripping device has the drawback, however, that the holding height of the holding jaws in relation to the base of the container receptacle is small. This stems from the fact that

because of the pivoting bearing system, sizeable sliding-contact surfaces have to be constructed on the upper side of the holding jaws so that insertion of a drinks container cause the holding jaws to pivot. The actual gripping point is located below the sliding-contact surfaces and therefore lies distinctly below the upper edge of the container receptacle. To guarantee a secure support, the container receptacle therefore has to be of very deep construction, which necessitates considerable installation space.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a holder for a beverage container which is a further improvement of the existing holders of this type.

More particularly, it is an object of the present invention is to provide a holder for a beverage container, which ensures a high gripping height of the holding jaws with minimal installation space.

In keeping with these objects and with others which will become apparent hereinafter, one feature of the present invention resides, briefly stated, in a holder for a beverage container which has holding jaws that are mounted using slideways. For that purpose, for example, in a housing of the holder, there are arranged channels or other recesses, in which pegs or other projections that are located on the holding jaws engage. Conversely, the projections can alternatively be arranged in the housing and the recesses on the holding jaws.

Mounting by means of slideways means that the geometry of movement and the holding forces occurring as a function of the particular

position of the holding jaws can be controlled in a very versatile manner. Thus, for example, by guiding the holding jaws in an obliquely upward direction, it is possible to obtain gripping points above the upper edge of the container receptacle. In this way, narrow drinks containers, for example, cups, are gripped low down. In addition, the bearing system using slideways allow the latter to be matched to the shape of the holding jaws in such a way that even wasted bottles can be removed without the holding jaws locking up with the slideways.

Of the invention

In a preferred embodiment , the slideways are curved. This enables a combined translatory and rotary movement for the holding jaws to be pre-set and at the same time an optimum match between the movement path of the holding jaws, their shape and the shape of the beverage containers to be achieved. If, in addition, each holding jaw is mounted by means of at least two non-parallel slideways, complex movements of the holding jaws can be predefined.

The holder in accordance with the present invention preferably has a removable tray as container receptacle. This permits easy cleaning of the container receptacle. Here too, the shape of the holding jaws and the configuration of the slideways can be selected so that the tray can be

removed and inserted with no need for the holding jaws to be displaced separately using the other hand.

The novel features which are considered as characteristic for the present invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The holder 1 illustrated in Figure 1 is provided for installation in a motor vehicle and can be used for holding a bottle 2 or other drinks containers, for example, cups, beakers, drinks cans or the like. It has a cup-shaped container receptacle 3. Adjacent an open top side of the container receptacle 3 the holder 1 has a cover 4. Alternatively, the container receptacle could merge integrally into a flange-like surround provided for closure of an installation opening for the holder 1 in the motor vehicle.

Four holding jaws 7 distributed around the circumference are arranged in openings 5 in the inner circumferential wall 6 of the container receptacle 3. The holding jaws 7 reduce the inside width of the container receptacle 3 and grip the bottle 2 to provide support. They are mounted in channel-like slideways 8 made in side walls 17 of the openings 5 and for that purpose have projections 9 that engage in the slideways 8. The slideways 8 are directed obliquely upwards, so that in the case of narrow drinks containers, such as the bottl3 2 illustrated, the holding jaws 7 are guided up above the upper edge of the cover 4, thereby giving rise to a high gripping point. In contrast, in the case of wide drinks containers, the holding jaws 7 are pressed obliquely downwards, so that, for example, cups, can be gripped

by a low gripping point. A spring 10 causes the holding jaws 7 to be pressed along the slideway 8 towards the centre line of the container receptacle 3.

Figure 2 shows a holder 1a with a removable tray 11 as container receptacle. The holding jaws 7a are guided in slidways 8a. When the bottle 2 is placed in the container receptacle, the holding jaws 7a are pressed obliquely downwards against the action of the spring 10a. Because the bottle is wasted, the holding jaws 7a describe an alternating up and down movement until they reach their final gripping point K. The inclination of the lower edges 12 of the holding jaws 7a and the inclination of the slideway 8a are in this case co-coordinated so that the force vectors acting on the point of contact between holding jaw 7a and bottle 2 always have a compact acting downwardly in the direction of the slideway 8a. This prevents the holding jaws 7a from locking up as drinks container is inserted and removed.

Furthermore, the inclination of the lower edges 12 of the holding jaws 7a enables the tray 11 to be removed simply by being taken hold of at its upper flange 13. In this operation, the lower edges 12 of the holding jaws 7a slide off the lower opening edges 14 of the openings 5. When the tray 11 is replaced, the holding jaws 7a are pressed downwards and outwards sufficiently far for them to slide along the outer wall of the tray

11 and finally through the openings 5. Neither during insertion nor during removal of the tray do the holding jaws 7a have to be manipulated separately.

The holder 1b illustrated in Figure 3 likewise has holding jaws 7b, which are mounted in slideways 8b. Here, two non-parallel slideways 8b form a pair, in which two peg-form projection s9b of the holding jaws 7b engage. The springs 10b press the holding jaws 7b by means of their sliding-contact edge 15 upwards and thus ensure the required gripping forces. The partial curvature of the slideways 8b and the fact that they are non-parallel cause the holding jaws 7b to perform a combined translatory and rotary movement as they are displaced. The line A indicates approximately the path of movement of the point of contact between notional wide and narrowing beverage containers respectively. A possibly arising non-cylindrical form of the beverage container can cause the actual point of contact to depart somewhat from this line.

Whereas the left half of the holder 1b is illustrated with a wide cup 16 as beverage container, the right half shows the bottle 2 again. It becomes clear that in the case of narrow beverage containers a high gripping height is reached, whereas with wide drinks containers, which are

often rather shallow, gripping is effected directly beneath the cover. In this way, tall, narrow beverage containers are very well protected against falling over and tilting, and in the case of wide, shall beverage containers the upper edge thereof remains free so that one can take hold of it there. Nevertheless, the overall installation height of the holder 1b compared with known comparable holders is small.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of constructions differing from the types described above.

While the invention has been illustrated and described as embodied in holder for a beverage container, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention.

What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims.